Environmental Degradation: Communities forging a path forward

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Sloan, L.M. & Schmitz, C.L. (2019). Environmental Degradation: Communities forging a path forward. *Journal of Transdisciplinary Peace Praxis,* 1(1) 13-38.

Originally published 01/2019 by Frontpage Publications Limited: https://jtpp.uk/.

Abstract:

Environmental degradation is well-known as a major cause of conflict as communities suffer from the effects of climate change, threat of toxins and depletion of natural resources (United Nations, 2009). The consequences are dire as environmental degradation impacts ecological and human health, leads to migration as people seek a safer habitat and gives rise to conflict precipitated by competition over increasingly limited resources (Sloan, Joyner, Stakeman & Schmitz, 2018). Although destructive conflict may result from environmental degradation, there are situations in which communities have come together to respond to environmental degradation with strategies that protect the environment and contribute to economic and political sustainability. This paper examines responses to ecological degradation through case studies. The Greenbelt Movement in Kenya, local peace building in Somaliland and two sites in the United States experiencing the destruction of their communities caused by the extraction of natural resources are compared and contrasted to identify models that support environmental remediation and the building of peace rather than escalating violent conflict.

Keywords: Social movements | environmental remediation | indigenous rights | community peacebuilding

Article:

INTRODUCTION

Environmental degradation is a major cause of violent conflict and human displacement (Stern, Young & Druckman, 1992). Community response to environmental degradation can range from denial and resignation to protests, violent conflict and forced migration. Environmental degradation is a global concern with local, state, national, regional and international responses required to protect ecosystems from political and economic forces anchored in patriarchal systems of greed and control. As powerful forces vie for short-term financial gains, marginalised communities suffer the consequences, frequently fighting for voice and recognition as they face violent conflict (Sloan, Joyner, Stakeman & Schmitz, 2018). Here, we examine the context and consequences of environmental degradation, comparing strategies that result in peace,

environmental protection and restoration of those that result in violence and further damage to the environment.

CLIMATE CHANGE AND ENVIRONMENTAL DEGRADATION

> *Climate change is having—and will have—devastating effects on a wide range of human rights, including rights to life, health, food, housing and water, as well as the right to a healthy environment.*
>
> — David Boyd, special rapporteur on human rights and the environment (Transcend Media Services, 2018, para. 13)

The Intergovernmental Panel on Climate Change (IPCC) recently released its long-anticipated special report on global climate change (2018). United Nations Chief António Guterres stated that

> *This report by the world's leading climate scientists is an ear-splitting wake-up call to the world. It confirms that climate change is running faster than we are—and we are running out of time.*
>
> (Transcend Media Services, 2018, para. 5)

The IPCC scientists paint a dramatic picture of the results of global temperature rising.

Increasing temperature means more heat waves, rising sea levels as glacial ice melts, and increases in hurricane and cyclone intensity, heavy rainfall and acidification of the oceans (United States Global Change Research Program [USGCRP], 2017). These changes in the environment may lead to food and water insecurity, loss of livelihoods, health and mental health issues, migration, conflict and widespread disease (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES], 2018a). Professor Robert Scholes, one of the lead writers of the IPCC report, warns that environmental degradation "is pushing the planet towards a sixth mass species extinction" (IPBES, 2018b, n.p.).

The evidence of climate change is easily observed. In 2017 alone, the world witnessed massive flooding and wildfires in California, heat waves in Australia, a formerly icy Greenland raging with the country's largest wildfire, flooding in Asia impacting 41 million people, drought in Somalia causing famine impacting 6.2 million people and devastating hurricanes killing 150 people in the United States (Ivanovich, 2018). In the US, observable changes also include water scarcity in the southwest and longer growing seasons around the country (Raleigh & Urdal, 2007). Climate change has already resulted in widespread destruction of crop land, grazing land and forests; and, scarcity of freshwater that often leads to displacement, migration, and conflict (Raleigh & Urdal, 2007).

A majority of the earth's population lives in areas that can be drastically affected by torrential rainfall. Global sea levels have already risen by eight inches since 1880, but are rising faster in some areas (Union of Concerned Scientists, 2014a). As temperatures rise, heavy rainfall events have increased up to 67% in some parts of the world (Union of Concerned Scientists, 2014a). This results in increased coastal flooding and increased flooding during high tides (Union of

Concerned Scientists, 2014a; USGCRP, 2017). The data indicate that approximately 50% the earth's population will be directly or indirectly influenced by monsoon systems (Carvalho & Jones, 2016). These threats are global, ignoring the borders of nation states.

A growing number of researchers investigating the connection between climate variability and conflict have found that hotter temperatures and reduced rainfall are connected to increases in conflict at all levels.

On the other hand, a lack of water is one of the leading causes of disease and death (Denchak, 2016). Decreased rainfall may limit farmers to one crop planting per season, rather than two (Parenti, 2011) or result in drought. With increasing land degradation and climate change, drylands will continue to increase. Four billion people are expected to live in drylands by 2050 (IPBES, 2018b). Tens of millions of trees have already died as a result of reduced rainfall, which increases risks of wildfires, destructive insects and stress from heat and drought (Union of Concerned Scientists, 2014b). With less rainfall in arid regions, conflict has increased by 45% (IPBES, 2018b). The degradation of land expected to force 50 to 700 million people to migrate by 2050 (IPBES, 2018b). Another important consequence of global environmental change is escalating conflict (Stern et al., 1992). Resources such as food, water and energy have been the source of environmental conflict for centuries (Széll, 2005). The United Nations (2009) identifies five channels through which climate change could affect security:

a) increasing human vulnerability,
b) undermining development and the ability of the state to retain stability,
c) escalating risk of domestic conflict,
d) rising threats to statehood due to loss of territory, and
e) growing international conflict as competition over resources increases.

A growing number of researchers investigating the connection between climate variability and conflict have found that hotter temperatures and reduced rainfall are connected to increases in conflict at all levels, from inter personal violence to war (Akresh, 2016). The balance between political and social factors and climate change could shift when global temperatures reach levels unprecedented in human history (Scheffran, Brzoska, Kominek, Link & Schilling, 2012). Such a change could lead to "tipping points" towards societal instability and an increased likelihood of violent conflict (Scheffran, et al., 2012). The warming of the planet has had a larger impact in the southern hemisphere, becoming a major factor in internal and cross-border migration (Powers, Schmitz, Nsonwu & Mathew, 2018). Climate change could escalate terrorism impacting security in wealthy areas globally (Gleditsch & Nordås, 2009).

The policies and politics of the US have resulted in limited progress towards environmental justice and sustainability, making it clear that governments working in isolation are not the best entities to address this global challenge (Weiss & Kitchell, 2012). The issues play out in the political realm pitting low-income communities, women and other activists against powerful political players who belittle their needs and intelligence. In the US, President Jimmy Carter responded by providing some support for protecting vulnerable populations in their fight against environmental destruction; but, with the election of Ronald Reagan, the progress was dismantled and activists were labelled environmental extremists. The focus turned to protecting industry

rather than people and communities. Over the following four administrations, Democratic presidents were more supportive of joining the global community to address environmental issues, the Republican presidencies were not; congressional support has been missing (Weiss & Kitchell, 2012). The Trump presidency has dismantled protections and pulled the US back from global action. In response, states and cities are moving to fill the gap.

Low-resource countries and indigenous people are the hardest hit by climate change and its consequences. However, recognising the importance of the natural resources to local culture, grassroots movements in these communities have worked to slow the degradation and start movement towards environmental restoration (see Wangari Maathai, 2003). In less than a decade, Brazil reduced deforestation by 67% by protecting indigenous land rights and changing agricultural practices (Oregon State University, 2017; Union of Concerned Scientists, 2011). Similarly, in Indonesia, Khao Din farmers reduced deforestation, reversed soil degradation and increased food security with a community forest and implementation of agroforestry (Marten & Suutari, 2006). Women have provided essential leadership for environmental protection and restoration, as seen in the Chipko project protecting forests in the Himalayas, the Navdanya project in India protecting seeds and food sovereignty (Navdanya, 2016) and the Kenya land takeovers by women reclaiming land for food rather than profit (Perkins & Kuiper, 2005). Environmental justice, indigenous rights and women's rights have come together.

It has become clear that a solitary focus on top down leadership for environmentally just change does not work. Due to the inequality of power and economic resources, large states and corporations are able to dominate over poorer communities (Skillington, 2017). Climate justice coalitions and nongovernmental organisations have taken a leadership role globally. They have become leaders in addressing climate change and the impacts of climate change on communities and individuals. They contribute to rebalancing power, the recognition of human rights and supporting the raising of voice in marginalised and poor communities, which are under-represented in systems and institutions (Skillington, 2017).

ENVIRONMENTAL CONFLICT CASE EXAMPLES

The case examples below examine environmental conflict and community responses in four situations around the globe. In each case, a brief description is provided of the conflict and stakeholders, followed by an examination of factors that contribute to, or hinder, community building, peace-building and environmental remediation. The case examples include the Greenbelt Movement in Kenya and Somaliland as two countries in which intertwining conflict and environmental degradation are being addressed through local, indigenous efforts. The other two case examples are Standing Rock and Mountain Top Removal in Appalachia, both in the US, where conflict around environmental degradation resulted in violence by private corporations and various government entities against the local, indigenous actors. The efforts in each of the situations continue.

THE GREENBELT MOVEMENT IN KENYA

Colonialism had a destructive and disempowering impact on Kenya. When the British arrived, there were 40 indigenous tribes living within the boundaries of the current country of Kenya;

they were robbed of power in order for the British to govern (Maathai, 2009; Ndege, 2009). Indigenous leaders were replaced, the people were subjected to genocide and forced migration was imposed (Ndege, 2009). Systems shifted under the impact of imperialism and capitalism that were established so that the British could control the use of resources for their benefit. The colonisers began the process of deforestation that has been a major factor in the ecological and economic devastation (Maathai, 2006; Merton & Dater, 2008).

The structural violence established under the British protectorate was accentuated after the independent Republic of Kenya was established in 1964 (Mamdani, 2018). The country has laboured under imposed boundaries that both divided tribal communities and forced separate tribal communities together. Local leaders now had little to no accountability, becoming more autocratic with intensifying violence and human rights crises (Mamdani, 2018; Ndege, 2009). The leaders were impervious to the complaints of the people. Kenya has struggled under the weight of political violence, ethnic and gender oppression, climate change and ecological degradation. This led to a negative impact on food production and the water supply (Opido, Odwe, Oulu & Omollo, 2017), undermining community health and sustainability.

Wangari Maathai, born in 1940, went through these struggles, ultimately becoming an activist and change leader. Growing up in a village in Kenya, Wangari Maathai experienced an ecosystem that was vibrant and self-sustaining. She was educated within Catholic boarding schools for 12 years, where she incorporated the concepts and values of safeguarding the common good, protecting rights and working with respect (Maathai, 2006; Merton & Dater, 2008). In 1960, she received a grant to study in the United States, completing her bachelor's and master's degrees in biology. While there, she learned about government with participation, the importance of good citizenship and the fact that women have the right to be outspoken. In 1971, she completed her Ph.D. at the University of Nairobi, becoming the first woman in East Africa to acquire a doctorate (Maathia, 2006; Merton & Dater, 2008). These experiences "began her path as an activist and change agent to rebuild the ecosystem, repair the fundamental connections of the people to their environment, and overcome political violence" (Powers et al., 2018: 1027). In 2004, she was the first woman in Africa to receive the Nobel Peace Prize (Maathai, 2003; Maathai, 2006).

When Dr. Maathai returned to Kenya, she found the ecosystem collapsed as a result of deforestation, clearing of land to build homes and farming practices that were not sustainable (Maathai, 2003; Merton & Dater, 2008). She brought women in the community together to explore their struggles and identify the possibilities for local action. One of the struggles the women identified was finding firewood for the daily cooking. This gave her the idea to plant trees. It would be a local project that the women owned and controlled. They would gather and germinate seeds, receiving a small payment as they grew to seedlings. This led to the development of the Greenbelt Movement as a way to rebuild the ecology and the community while empowering women. This undertaking occurred at the nexus of environmental degradation, gender oppression and violent political conflict (Merton & Dater, 2008). Dr. Maathai understood that the women had to learn that they must stand for their rights, environmental rights and women's rights. Because it was only a project involving women, the organising was not noticed by the repressive, patriarchal government. This would change as the women mobilised for change.

The movement grew, the ecology came back into balance and the women started having economic success (Maathai, 2003; Merton & Dater, 2008; Strides in Development, 2010). As women do, they invested their earnings in their children's future by advancing education, enriching the land and building for economic sustainability. They bought livestock, grew crops and started markets. As happens with colonised populations, the indigenous methods and crops had been lost to memory. The women relearned and embraced crops that were historically grown. In working for the land, they strengthened families, health and community. The Greenbelt Movement expanded and morphed into activism in opposition to the oppressive regime of President Moi who came into power in 1978 and remained in power for 24 years (Merton & Dater, 2008). Dr. Maathai led a fight for democracy within the context of a government that supported and advanced violence. Dr. Maathai fashioned transformative change that incorporated indigenous knowledge and the promotion of civic dialogue and critical assessment, while empowering the community (Merton & Dater, 2008). As the women persisted in the face of violence, they empowered themselves, resisted gendered oppression, started businesses, invested in land, and involved the community to oppose the tyranny and oppression. The movement expanded into activism providing classes in civic engagement and opposing political oppression (Maathai, 2006; Merton & Dater, 2008). They offered classes in civic and environmental education, which evolved into the Community Empowerment and Education Seminars (CEE) (The Greenbelt Movement, 2018; Merton & Dater, 2008). Participants learned the skills for advocacy for democratic space and holding national leaders accountable (Merton & Dater, 2008).

A turning point came in 1989 when the Moi government planned the demolishing of Uhuru Park, the only park in Nairobi (Maathai, 2006; Merton & Dater, 2008). Dr. Maathai mobilised resistance. She contacted European donors who were to provide the funding. In the process, she was labelled a disobedient woman who was scorned and avoided out of fear. She held firm, however, and international funders withdrew. This raised consciousness of the possibilities. If one woman could stop a building, the government could be changed. She led by modelling the significance of doing the right thing even in the face of danger. Dr. Maathai was at the risk of violent attacks by the Moi government because she challenged unbridled authority while demonstrating the potential power of a civil society. The community of women organised to watch over her to assure that the government did not take her into custody (Merton & Dater, 2008). And, she took care not to break any laws so that the government did not have an excuse to arrest her.

The government now became a part of the solution. The military was brought into the process with a new commitment to protecting the country and the environment. There was now a focus on protecting the environment, democracy and peace for the children.

Another test came in 1992 when the women organised nonviolently to demand that the Moi government must release their sons, friends and relatives who were being held as political prisoners. The women coordinated a strike at the Freedom Corner of Uhuru Park in Nairobi (Maathai, 2006; Merton & Dater, 2008). After three days of striking, others joined them, including the victims of torture; the men came and cried. The expanding set of strikers was courageous as government troops attacked. Using indigenous models of resistance, the women

stripped naked and shook their breasts. Culturally, any woman of the age of your mother must be treated with respect; the men were scorned by the showing of the women's nakedness (Merton & Dater, 2008). Dr. Maathai was beaten into unconsciousness. The injured were taken to the hospital; the strikers returned the next day and continued their protest. Others, women and men, joined in the protest where it was demanded that no one should be jailed for political beliefs. They continued for 11 months, until their children were released.

Dr. Maathai's commitment to nonviolent change was reinforced as she worked with tribal leaders, urging them not to engage in ethnic conflict manipulated by the Moi government. Through this process, she came to understand that national conflicts were linked to the abuse of the environment and that the conflict would not end until resources were used equitably for all people. The pathway forward was inclusive and educational. Seminars and workshops were developed regarding governance, civic duties and citizen responsibilities for holding the government leaders accountable for their action (Maathai, 2006, 2009; Merton & Dater, 2008).

A critical mass of the population came together to protest against the destruction of the Karura Forest (Maathai, 2006; Merton & Dater, 2008). This coalescing movement precipitated political wins. President Moi was voted out of power in 2002 with the voting in of a coalition government committed to advocating reforms; Wangari Maathai was elected to the parliament with 98% of the vote (Maathai, 2006). The government now became a part of the solution. The military was brought into the process with a new commitment to protecting the country and the environment. There was now a focus on protecting the environment, democracy and peace for the children.

SOMALILAND

In 1960, the Italian colony of Somalia was united with the former British protectorate of Somaliland to create the Republic of Somalia. The union was not a happy one; and, in response to the harsh military regime of Mohamed Siad Barre, with power located in Mogadishu to the exclusion of clans from Somaliland, the Somali National Movement (SNM) formed. The SNM joined with others to force Siad Barre out of power, resulting in three years of active conflict. In 1991, Somaliland declared itself an autonomous state, although it is still not internationally recognised as such. This lack of international recognition together with subsequent isolation from international intervention, has been cited as a significant factor that led to the peace brokered by traditional elders and maintained by the people (Phillips, 2016).

Declaring itself a sovereign nation did not stop the violence in Somaliland. In response to the ongoing violence, hundreds of women protested until clan elders agreed to negotiate for peace (Inclusive Peace and Transition Initiative [IPTI], 2018). Perhaps most significant in the peace process was the decision to use the traditional system of clan elders (forming the *guurti*) to negotiate the peace process (IPTI, 2018; Farah & Lewis, 1997; Pegg & Kolstø, 2015). Using a bottom-up, traditional system of conflict resolution, clan elders worked for months to create a consensus on challenging issues (IPTI, 2018). They strived for consensus through a strong commitment to dialogue (Pegg & Kolstø, 2015). Although the negotiations were limited to male clan elders, many authors note the importance of women in carrying messages and influencing the resolution of differences between their husbands' and fathers' clans when negotiations stalled (IPTI, 2018; Farrah & Lewis, 1997; Phillips, 2016). The *guurti* system was formally

incorporated into Somaliland's bicameral government (IPTI, 2018; Farah & Lewis, 1997); peace has continued since 1997.

As a result of years of conflict and civil war, both between Somaliland and the Barre military, and the civil war within Somaliland, there was

> total damage in the Northern region of Somaliland which caused absolute devastation of forests and wildlife. In particular, trees were severely smashed by the bombs and military tanks of the Siyad Barre forces in Somalia . . . severe droughts . . . triggered the death of millions of livestock . . . deforestation is driving the country towards poverty and other environmental degradation that can be a reason for long-term economic, social and environmental barriers in the coming future (Hussein, 2018, n.p.).

Environmental degradation was not only a consequence of conflict, but also a cause (Republic of Somaliland Ministry of Environment and Rural Development [MoERD], 2016). Widespread deforestation and several consecutive years of drought led to conflict as local pastoralists fought over access to limited grazing land and water for their livestock (Mengisteab, 2011; Pastoral and Environmental Network in the Horn of Africa [MENHA], 2005; MoERD, 2016). Drought and conflict have led to forced migration and famine (PENHA, 2005). Over 500,000 people are experiencing severe food and water shortages because of the drought (Save the Children, 2017) and over 84,000 persons are internally displaced, also due to prolonged drought (Internal Displacement Monitoring Centre, 2015).

It is of no surprise that environmental degradation and conflict have greater consequences for women and girls. In Somaliland, female climate refugees experience frequent sexual assault, lack of employment opportunities, lower birth rates, higher likelihood of miscarriages and lack of safe private sanitation facilities (Rowsome, 2017). Even with impending anti-rape legislation that would outlaw early forced marriage, Save the Children (2018) is "encountering repeated cases of forced child marriage as a result of the drought" (para. 2). Save the Children (2017) also reports increase in child exploitation for labour, physical abuse and rape, and decreases in school attendance as the drought separates children from their families or forces children to work.

The indigenous peace process followed in Somaliland helped to lay the groundwork for environmental recovery, despite—some would say because of—a lack of much international investment. As communities came together to maintain peace, they also worked together towards environmental and economic sustainability (PENHA, 2005, 2018). Believing that humans were the cause of most of the environmental degradation, communities employed new methods to rehabilitate and protect the land (PENHA, 2005, 2018). Working with Oxfam, the use of bunding or permaculture has shown success in bringing moisture and plants back to the land (PENHA, 2005). The rehabilitation of a canal and valley dam increased productive land, bringing water pastoralist communities and increasing income (PENHA, 2005). With the support of pastoralists, communities work together to protect vulnerable grasslands from overgrazing (PENHA, 2005).

Although women were excluded from formally participating in the earlier peace process, they are playing a significant role in the environmental and economic recovery of Somaliland (PENHA, 2018). As previously noted, women's groups were instrumental in calling for peace which led to

the initial peace processes in Somaliland. Women's groups remain strong in Somaliland, with over 46 women's organisations listed as members of the umbrella organisation NAGAAD (2018) Network which serves as a "collective voice of women who were determined to fight for their socio-economic and political rights as equal citizens of Somaliland" (para. 1). Training groups of women, rather than individual woman, is vital. In a country where women's movements in public are often restricted, "when women are in groups, it is easier for husbands to allow them to leave their homes to market their products or services (Fears of infidelity, or the ridicule of their peers, are diminished.)" (Livingstone & Ruhindi, 2011: 6). In addition, attending a training or engaging in a new endeavour with a group of women can "give individual woman the confidence to undertake new activities they would otherwise find too daunting" (Livingstone & Ruhindi, 2011: 6).

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It is recognised that diversification of the economy is one of the best safeguards against the impact of environmental degradation. It is also recognised that women are more likely to keep the income they earn in the family and community. Therefore, women have been targeted for micro-loans to encourage entrepreneurship, and women are employed to do the actual work of environmental rehabilitation (PENHA, 2005, 2018). Providing income to women has reduced the pressure on families to cut trees to sell for firewood or make into charcoal (PENHA, 2005, 2018). In a situation of diminished access to water, the diminution of grazing land and the ban on Somaliland livestock exports, the micro-business activities are helping to reduce the pressure on the cutting of trees, and the selling of charcoal and firewood, and in meeting family consumption and income generation needs. Micro-credit loans have not only enabled pastoralist women to be engaged in economic activities, but are also helping to reduce environmental degradation and improve tree conservation, thus acting as a practical means of environmental stress relief. Ultimately, the promotion of diversified sources of income can only reduce pressure on the land and have a beneficial effect on the environment. These benefits may become long-term if the programmes are sustained and more widely adopted (PENHA, 2018).

WATER IS LIFE: STANDING ROCK RESERVATION (US)

In 2016, national and international communities once again turned attention to Standing Rock Reservation in North Dakota where the Standing Rock Sioux and thousands of allies were protesting against the construction of the Dakota Access Pipeline (DAP). DAP was intended to move oil from shale fracking in northern North Dakota to pipelines that traverse the US. Not only did pipeline construction disturb sacred Sioux land (such as burial sites), the pipeline runs under the Missouri River, the primary source of water for the Sioux nation; an oil spill would put this supply in jeopardy (Enoch, 2016). The 1868 Treaty of Fort Laramie reserves the land across which the pipeline would be installed for "the absolute and undisturbed use and occupation" of Native inhabitants (USA, para. 5). In addition, the National Historic Preservation Act of 1966 (2004), the Native American Graves Protection and Repatriation Act of 1990 and Executive Order 13175 (2000) require government agencies to consult with tribes prior to granting access for activities that could impact native peoples or places. Although these and other federal laws

require tribal consultation, approval for the DAP was granted without this step. This failure, and the Sioux commitment to protect the water, resulted in the violent conflict at Standing Rock.

Resistance to the taking and abusing of the lands around Standing Rock is also not new. The taking of land for the railroad and gold prospecting fed the Sioux War for the Black Hills in 1876 (Republic of Lakotah, 2018). While this battle—the Battle of Little Big Horn—was won by the Sioux, the conflict did not end. The Sioux have used nonviolent, indigenous and Western means (e.g., lawsuits, protests, prayer) to demand the return and protection of Native lands. In 1923, the Lakotah used the US legal system and again filed a claim for the return of the Black Hills. The Supreme Court and Congress eventually ordered payments to the Lakotah for the illegal taking of land and resources; the Lakotah continue to insist upon the return of the land and refuse the financial settlement (Sacred Stone Camp, 2016). Even with these recent financial 'wins' by tribes, the US Corps of Engineers granted permission for the DAP to move ahead without the required full consultation with the tribe. Prayer and protest at Standing Rock followed.

As in many environmental justice movements, women led the struggle at Standing Rock. Deep spiritual connection to the water drove indigenous women forward throughout the protest. The "Lakota word for womb is . . . 'her water' . . . , If the water is poisoned, then [woman] is poisoned" (Bogoda, 2017, para. 1). In April 2016, Standing Rock Sioux elder, LaDonna Brave Bull Allard, in response to the construction of the DAP, opened the Sacred Stone Camp, inviting others to join her in prayer. Sacred Stone Camp would become the heart of prayers by water protectors to stop the DAP (Sacred Stone Camp, 2016). Indigenous women leaders from around the US led at Standing Rock: Winona LaDuke with Honor the Earth; Osprey Orielle Lake with Women's Earth and Climate Action Network (WECAN); Billie Jean Three Legs of Rezpect Our Waters; Kandi Mossett of Indigenous Rising; and, Michelle Cook with Water Protector Legal Collective (Hult, 2017). At Standing Rock, the women served as

> spiritual leaders, as leaders of prayer circles, as oral historians who recited the ancient stories of power, most often as the unsung heroes who saw a need and filled it, who saw that sweat lodges needed to be built and put the call out for that to happen. Women were often the ones who maintained a climate of peace and nonviolence and made sure that peace prevailed, within the camp, if not between the camp and the outsiders (Randol, 2017, para. 10).

Besides organising Sacred Stone camp, the women led the protests. Women also cooked and set up a school, while midwives provided medical care and delivered babies (*Democracy Now*, 2016a).

Over the summer, thousands would join the camp, including representatives from over 100 tribes. In August 2016, the Standing Rock Sioux filed lawsuit against the Army Corps of Engineers to halt the pipeline. Despite a pending injunction, DAP bulldozers cut a two-mile swath across Sioux land identified in the lawsuit as containing graves and other historical sites (McCauley, 2016). When the Water Protectors tried to stop the bulldozers, private guards hired by DAP responded with pepper spray and attack dogs (Manning, 2016). From that point, until the camp was destroyed in 2017, there were repeated attacks against protesters by law enforcement with water cannons in below freezing weather, teargas, rubber bullets, mace, and

concussion grenades, injuring hundreds (Park & Cuevas, 2016). By the end of the year, over 150 protesters had been arrested.

The violence did not end when protesters were arrested. With women leading the protest, they were also the ones first maced, attacked and arrested. Women protesters reported being strip searched and held in jail for days without charges or bond for minor offences. When LaDonna Brave Bull Allard's daughter was arrested, she was "strip-searched in front of multiple male officers, then left for hours in her cell, naked and freezing" (*Democracy Now*, 2016b, para. 9). Linda Black Elk tweeted, "Our sisters who got arrested were stripped, marked with numbers, and held in dog kennels. Sound familiar?" (2016, para. 1). Amnesty International decried the use of strip searches and harsh treatment and sent observers to monitor law enforcement's response at Standing Rock (2016). As Taté Walker wrote "This is about Indigenous resurgence, sovereignty, and resilience. This is about the legacy we leave the next seven generations and beyond" (2016, para. 79).

Despite months of prayer and protests by thousands of people and several lawsuits to stop it, the Dakota Access Pipeline was completed in April 2017. About 500,000 barrels of oil now flow daily through the pipeline (McCown, 2018); several small leaks have been reported since it was opened (OpenInvest, 2018). In the past year (November 2017-2018), there have been two major leaks in other pipelines that run through the Dakotas: 210,000 gallons of oil in South Dakota from TransCanada Corp's Keystone pipeline and about 180,000 gallons into the Ash Coulee Creek in North Dakota from the Belle Fourche pipeline (OpenInvest, 2018). Although the next steps to halt oil flowing through the DAP are unclear, actions to stop construction on the Keystone XL Pipeline—a pipeline that would carry over 800,000 barrels of oil per day from Canada to Texas—continue. Like the DAP, the Keystone XL violates similar treaties with, and sovereignty of, indigenous peoples. As of this writing, Judge Morris of the U.S. District Court in Montana has halted construction on the Keystone XL (Barbash, Chiu & Ellperin, 2018).

As Layli Long Soldier would ponder,

> If ten thousand people camping at Standing Rock to protect the Missouri River could not stop the siege of the Dakota Access Pipeline, then what does it take? What more? . . . I do not have the answer to What more does it take? except to say that I know, we all know, it will take more. And toward this, our work continues (Long, 2017).

Perhaps, in the end, the nonviolent prayers and protests of indigenous people and their allies will win. A delegation of indigenous women from Standing Rock travelled to Norway and Switzerland to ask investors around the globe to divest from supporting the DAP (Lake, 2017). A recent study by Colorado University Law School and the Leeds Business School suggests that Energy Transfer Partners—the parent company of the DAPL—lost about $7.5 billion because of the protests, lawsuits, delays, divestments and loss of stock value (Sorenson, 2018). The DAP is, after all, about profits.

MOUNTAINTOP REMOVAL IN APPALACHIAN COAL COUNTRY (US)

The desire to control the exploitation of high-value "extractive" natural resources can drive violence and instability.

> Environmental damage and degradation (caused, for example, by extraction activities) often threatens livelihoods and can cause or aggravate tensions. They also increase the risk of disasters—in turn generating or furthering vulnerability to conflict outset (Organisation for Economic Co-operation and Development [OECD], 2005: 1).

Particular risks are the presence of "spoilers", who benefit from economic activities that feed into and flow out of conflict situations in which they claim economic gain from natural resources (land, forests, coal, etc.) that local communities depend on for their livelihood (Shnayerson, 2008).

Coal Country exists at the juncture of ecological degradation, physical destruction, and abusive economic inequality. The humanity and rights of the most vulnerable, economically, socially and politically, are attacked. As the coal industry has become more mechanised, local communities are displaced while the Appalachian Mountains of the US are irretrievably damaged (Barry, 2012). Mountaintop removal (MTR) is a mechanised system that has resulted in job losses in local communities (Haney, 2011). MTR damages the human and nonhuman environments, negatively impacts the health and economy of local families and communities.

In Boone County, West Virginia, US, the scenario plays out as it does in many Appalachian communities (Haney, 2011). Here, the community struggles to fight the destruction of the environment and their social systems. The political, social and economic systems are set up to empower and enrich those with economic and political power (Shnayerson, 2008). With MTR, forests are destroyed, new water channels flood communities and water quality damaged (Haney, 2011). The human story of MTR is interconnected with the ecological story, playing out personally and collectively. With the destruction of the mountains, towns are flooded, homes are destroyed; people are injured and killed. As the mountains come down with a dumping of the over burden and the blasting, people and property are damaged by large particles and by those unseen because of size (Haney, 2011).

Adults and children alike have their health impacted by the mercury, arsenic, lead that invade the community due to the fall out of MTR and through the polluted air of the coal plants. In Boone County, the elementary school is directly under a coal stack having devastating effects of the health of the children. Neither the coal company nor the government has been willing to relocate the school (Haney, 2011). The decreasing water and air quality have resulted in significant health problems, including high rates of birth defects, cancers, brain tumors, lung diseases, asthma, autism, lead poisoning and early death (Haney, 2011).

As a consequence of the damage and destruction, communities are fighting for the life of their land, communities, children and the potential to make a living. Working-class women, including Cherokee women, of Appalachia are caught at the nexus of gender oppression and environmental destruction (Barry, 2012). While the women of West Virginia have historically been active in fighting for reform, there is a shift with this era of MTR (Barry, 2012). Women activists now see a future of the region without coal mining. The focus has shifted to framing the mountains as

central to state identity and heritage, and to fighting for the creation of communities that are economically and ecologically sustainable (Barry, 2012). This is in opposition to Big Coal and state politicians who frame West Virginia as an extraction state.

Maria Gunnoe, an activist with the Ohio Valley Environmental Coalition (OVEC), has been a leader in exposing the "environmental problems impacting coalfield communities, drawing attention to the urgent need for sustainable communities" (Barry, 2012: 79). Women like Marie Gunnoe, Lorelei Scarbor, and Julie "Judy" Bonds as members of Coal River Mountain Watch (CRMW) have been at the forefront of the struggle to reclaim the mountains as they fight for alternatives (Barry, 2012; Haney, 2011). Economic diversity and community health are major focus areas of women activists who are embracing the environmental justice movement in the struggle against MTR (Barry, 2012). Here, people and nature are conceptualised as intertwined and equally important, and embrace the cultural significance of the mountain environment in Appalachia. They have recognised that coal is a major culprit in climate change; coal, which supplies 50% of our energy, is an enemy of sustainability (Haney, 2011).

CRMW is active in the fight for creating alternatives economically and environmentally. One of their major efforts involves the development of sustainable wind farms. They have been active in studying the scientific, atmospheric and environmental conditions necessary to build a sustainable wind farm in the Appalachian Mountains of West Virginia (Haney, 2011). Their proposal would be sustainable economically on an ongoing basis. They would provide more jobs in the near and distant future than the coal industry. They are struggling to establish wind farms as the local and most powerful coal company in the area, Massey Energy, is destroying the very mountains that are perfectly positioned to house this venture (Haney, 2011).

Big Coal is a formidable opponent with global influence (Barry, 2012). The coal industry is subsidised and privileged with economic benefits such as tax breaks and state and federal protections (Haney, 2011; Shnayerson, 2008). As the activists (local and national) engage in nonviolent resistance, the coal companies and government systems respond with violence (Haney, 2011). Large corporations, such as Massey Energy, have the economic power and resources needed to influence politicians and impact the government from the local level to the state and national. They have political protections that support them in destroying the health of the community and individual citizens (Haney, 2011; Shnayerson, 2008). As powerful and wealthy stakeholders impact regulations and policies, local stakeholders with less power may find it difficult to impact political bureaucracies (Hirsch & Duke, 2014). The fight continues with local activists suing the coal companies and pressure coming to bear on Environmental Protection Agency (Haney, 2011).

Central Appalachia continues to face a crisis with destruction of their mountains and the devastation of their communities. These areas are currently littered with abandoned mines and regional poverty (Chen, 2018). Minor successes do occur. Boone County, West Virginia was finally granted permission to build the new elementary school; 1/5 is to be paid by Massey Energy (Haney, 2011). The Reclaiming Appalachia Coalition, encompassing grassroots groups who advocate for environmental and labour justice, have a plan (Chen, 2018). They have ". . . mapped 20 potential alternatives to coal across Kentucky, Ohio, Virginia, and West Virginia,

collectively seeking regional revitalisation through green technology, renewables, and sustainable industries" (Chen, 2018: 1).

CASE EXAMPLE COMPARISONS

The case examples described above were selected both for their current success (The Greenbelt Movement and Somaliland) and lack of success (Standing Rock and MTR). Information was collected to enable comparison of the a) use of indigenous or other models to resolve conflict, b) relationships among those involved, and c) inclusion of women, while recognising the ongoing cyclical nature of conflict in these situations, success appears linked to indigenous models, trusting relationships between actors and inclusion of women (Olsson & Jarstad, 2011).

INDIGENOUS MODELS

In both Kenya and Somaliland, environmental and conflict transformation were sparked and maintained from the bottom up. Ownership of the transformation process was centred on the local level, an important variable as highlighted by Olsson and Jarstad (2011). It is perhaps precisely because Somaliland did not have external international actors involved that the local people were able to follow their own organic process to transform conflict and increase environmental protection. In both countries, as communities came together to maintain peace, they also worked to protect and rehabilitate the environment. Their livelihoods depend upon the land, whether as pastoralists or agriculturalists. In Somaliland, it has to be also acknowledged that there were no investors seeking to make profit from the land and its remaining resources; it was only the locals who need the land to make a sustainable living.

On the other hand, at Standing Rock and in Appalachia, despite local and indigenous organising, governmental decisions were imposed from the top down, with little or no input from local and indigenous peoples, resulting in escalating violent conflict. Despite US law that required consultation with local tribes, the US government failed in this responsibility at Standing Rock. In Appalachia, the plight of the locals has been ignored as companies look for profit and the government encourages the production of coal. There was/is no validation of local ownership and no shared peacebuilding (Olsson & Jarstad, 2011).

RELATIONSHIPS BETWEEN ACTORS

According to Lederach (2015), the quality of relationships is a key variable contributing to success or failure of transforming conflict. In Somaliland and Kenya, building trusting relationships became the basis for building peace and rehabilitating the environment (Lederach, 2015). The people of Somaliland have a long history of functional relationships among various families/clans and communities. This long history and indigenous methods of addressing conflict led to the commitment to work for months and years to create peace, a stable government and ecological rehabilitation.

Conversely, the responses at Standing Rock and in Appalachia were impacted by the lack of trusting relationships. At Standing Rock, the history of genocide, removal from indigenous lands, and broken treaties disrupted trust with little hope for success in negotiations with the US

government until this history is confronted. Similarly, the people of Appalachia have been silenced, disrespected and robbed of the use of the natural resources needed to make a living. The voices of the women advocating for the health of their children, families and communities have been disregarded and discounted by key political and corporate actors.

In both Standing Rock and Appalachia, the desire for private companies to make maximum short-term profit off dirty forms of nonrenewable energy (oil and coal) is in direct conflict with local and indigenous peoples' interest in protecting the water, land and ecology, along with their health and economic opportunities. In both cases, the local voice was marginalised with the power residing in the corporations and the state. Decision making involved top down demands, silencing and enforcement through violence.

INCLUSION OF WOMEN

Women's leadership, inclusion and empowerment were/are important in Kenya, Somaliland, Standing Rock and Appalachia. In Kenya and Standing Rock, women led the movements creating change using traditional methods. In Kenya, after finding their voice, the women moved to spark civic education and dialogue in the community. In Standing Rock, it was women who called for action, leading prayer and protests. In Somaliland, women were also instrumental in calling for peace. Efforts to rehabilitate the environment have also been used for women's empowerment. Similarly, in Appalachia, women have been and continue to be at the forefront in calling for solutions to environmental degradation.

Women's commitment to family and community and the disproportionate impact of environmental degradation on them make women logical actors to lead peacemaking and environmental rehabilitation. When women have been engaged in environmental protection, they have been able to protect resources, diversify income and reduce food insecurity. It is women's connection to earth, water and community that led them to protest at Standing Rock. In Kenya, planting trees both for environmental and economic reasons allowed women to organise outside the gaze of men. In Somaliland, micro-loans were/are given to women to encourage economic diversification, reducing the strain on the environment as alternative sources of income are created. In Appalachia, women have also been critical to the ongoing struggle to protect the environment. In addition to roles of leadership, women often make household decisions about cooking, energy, farming and other expenditures. From leadership roles to every day decisions, women are important to protecting the environment now and for the future.

CONCLUSION

Climate change and environmental degradation are complex, multi-dimensional problems linked to global migration, violent conflict and poverty (Sloan et al., 2018). Climate change is happening quickly, and therefore, the risks, conflicts and potential for transformation continue to shift. Conflicts are not resolved but are in a continuous process of transformation. The circular process of the transformation model ". . . underscores the continuous nature of conflict. This model highlights the contexts of relationship patterns at all levels" (Reimer, Schmitz, Janke, Askerov, Strahl & Matyók, 2015: 27). Analysis of development and intervention must be a continuous and holistic process recognising the centrality of relationships (Reimer, 2018). At

each step, a key question is as to who the international, national and state communities should be recognised as having local ownership of peace (Olsson & Jarstad, 2011).

Climate change is an inescapable fact causing significant impact on sea levels, temperature, loss of species, drought, flooding, famine, migration and conflict (IPBES, 2018b; IPCC, 2018; Stern et al., 1992). Although there are countries across the globe responding to the call for environmental protection and rehabilitation, federal and corporate actors in the US continue exploitation of the land and resources. While wealthy countries in the global north, the US specifically, contribute the most to environmental degradation, it has been developing countries and regions, many in the global south, that have produced strategies that have had some success in rehabilitating and protecting ecological systems. The case examples highlighted in the global south used indigenous, bottom-up, consensus models that are inclusive of diverse voices. Those highlighted in the global north, although local and indigenous models may have been used by those protesting the environmental degradation, the response was met by top-down models rooted in political conflict (lawsuits, protests) and environmental racism in which the wealthy profit from the suffering of the most vulnerable.

Environmental degradation "exacerbate[s] growing inequality and . . . increase[s] . . .the 'othering' of vulnerable populations, disproportionally impacting marginalised communities" (Sloan et al., 2018: 133). The environmental challenges of the day provide an opportunity for growth and change. Restoring and protecting the environment and building peace require "institutional transformation, economic reconstruction, social inclusion, and reconciliation" (Fjelde & Hoglund, 2011: 11). Unfortunately, partial peace often spawns new/ongoing conflicts between local and state actors (Fjelde & Hoglund, 2011). While challenges such as these

> have the potential to awaken the best of the human spirit . . . this is not an automatic process. . . . It requires that we acknowledge our own history and *our enemy's*, search honestly for root causes, and shift our emphasis from national security to human security (Yoder, 2015: 6).

Conflict transformation is an ongoing process requiring continuous work (Lederach, 2015). Conflict is a normal and continuing process; and the transformation process requires ongoing work across relationships, issues, patterns, and structures. Ideally it is a process of continuously working towards more productive use of conflict to create stronger relationships and systems of peace and justice. The successes in Kenya and Somaliland are part of this continuous process of using conflict to produce peaceful change and environmental justice.

Social justice and environmental justice are inseparable. As climate change transforms ecosystems around the globe, local communities, nation states and the global coalitions need to work together to develop and implement solutions to environmental degradation. In the work to protect and rehabilitate the planet, women have shown leadership and entrepreneurship. Investing in women and environmental protection and rehabilitation results in both environmental and economic sustainability.

REFERENCES

Akresh, R., 'Climate Change, Conflict and Children', *The Future of Children*, Vol. 26, No. 1, 2016, pp.51-71 (Akresh, 2016)

Amnesty International, 'Amnesty International USA to Monitor North Dakota Pipeline Protests', Amnesty International USA, 2016, retrieved on 12 September 2018 from https://www.amnestyusa.org/press-releases/amnesty-international-usa-to-monitor-to-northdakota-pipeline-protests/

Barbash, F. Chiu, A. & Ellperin, J., "Federal judge blocks Keystone XL pipeline, saying Trump administration review ignored 'inconvenient' climate change facts", *The Washington Post*, retrieved on 16 November 2018 from https://www.washingtonpost.com/nation/2018/11/09/keystone-xl-pipeline-blocked-by-federal-judge-major-blow-trump-administration/?utm_term=.deafb13ad999 (Barbash, Chiu & Ellperin, 2018)

Barry, J. M., *Standing Our Ground: Women, Environmental Justice, and the Fight to End Mountaintop Removal*, Athens, Ohio University Press, 2012 (Barry, 2012)

Black Elk, L., 'Our sisters who got arrested were stripped, marked with numbers, and held in dog kennels. Sound familiar?' #NoDAPL, retrieved on 29 November 2018 from https://twitter.com/lindablackelk/status/792112349666680833

Bogoda, A., 'How Contaminating the Water at Standing Rock Threatens Women's Reproductive Rights', *Teen Vogue*, retrieved on 30 November 2018 from https://www.teenvogue.com/story/water-standing-rock-womens-reproductive-rights (Bogoda, 2017)

Carvalho, L. M. V. & Jones, C., *Monsoons and Climate Change: Observations and Modeling*, Cham, Springer, 2016 (Carvalho & Jones, 2016)

Chen, M., 'Appalachia already has a plan to get past coal—Green energy, jobs training, affordable housing: We just need to fund it', *The Nation*, retrieved on 27 November 2018 from https://www.thenation.com/article/coal-appalachia-green-jobs/ (Chen, 2018)

Democracy Now ,'Midwives at Dakota Access Resistance Camps: We Can Decolonize, Respect Women & Mother Earth', retrieved on 26 November 2018 from https://www.democracynow.org/2016/10/18/midwives_at_dakota_access_resistance_camps (*Democracy Now*, 2016a)

Democracy Now, 'Dakota Excess Pipeline? Standing Rock Protectors Strip-Searched, Jailed for Days on Minor Charges', retrieved on 21 October 2018 from https://www.democracynow.org/2016/10/17/dakota_excess_pipeline_standing_rock_protectors (*Democracy Now*, 2016b)

Denchak, M., 'Are the Effects of Global Warming Really that Bad? National Resources Defense Council', retrieved on 15 November 2018 from https://www.nrdc.org/stories/are-effects-global-warming-really-bad (Denchak, 2016)

Executive Order 13175, 'Consultation and Coordination with Indian Tribal Governments', retrieved on 28 October 2018 from https://www.gpo.gov/fdsys/pkg/FR-2000-11-09/pdf/00-29003.pdf (Executive Order 13175, 2000)

Farah, A. Y. & Lewis, J. M., 'Making Peace in Somaliland', *Cahiers d'Études Africaines*, Vol. 37, No. 146, pp.349-377 (Farah & Lewis, 1997)

Fjelde, H. & Hoglund, K., 'Building Peace, Creating Conflict?' in H. Fjelde & K. Hoglund (eds.), *Building Peace, Creating Conflict? Conflictual Dimensions of Local and International Peace-Building*, Sweden, Nordic Academic Press, pp.11-24 (Fjelde & Hoglund, 2011)

Gleditsch, N. P. & Nordås, R., 'Climate Change and Conflict: A Critical Overview', *Die Friedens-Warte*, Vol. 84, No. 2, pp.11-28 (Gleditsch & Nordås, 2009)

Haney, B. (Writer, Director, Producer), *The Last Mountain* [cutting down the Appalachian Mountains], Los Angeles, Docurama (Haney, 2011)

Hirsch, S. F. & Duke, E. F., *Mountaintop Mining in Appalachia: Understanding Stakeholders and Change in Environmental Conflict*, Athens, Ohio State University Press, 2014 (Hirsch & Duke, 2014)

Hult, J., 'Women of Standing Rock aren't backing down', *USA Today*, retrieved on 20 November 2018 from https://www.usatoday.com/story/news/nation/2017/03/11/women-standing-rock-arent-backing-down/98975956/ (Hult, 2017)

Hussein, M. R., 'Deforestation in Somalia: Historical Overview, Challenges and the Way Forward', retrieved on 31 October 2018 from http://www.horndiplomat.com/2018/05/07/deforestation-in-somaliland-historical-overview-challenges-and-the-way-forward/ (Hussein, 2018)

Inclusive Peace and Transition Initiative (IPTI), Infographic: 'Women's Role in Somaliland's Peace and Political Reform Process', 1993, retrieved on 30 November 2018 from https://www.inclusivepeace.org/content/infographic-women-role-somaliland-peace-and-political-reform-process-1993 (IPTI, 2018)

Intergovernmental Panel on Climate Change (IPCC), 'Global Warming of 1.5 C', retrieved on 15 November 2018 from http://www.ipcc.ch/pdf/special-reports/sr15/sr15_ts.pdf (IPCC, 2018)

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 'Assessment Report on Land Degradation and Restoration', retrieved on 15 November 2018 from https://www.ipbes.net/assessment-reports/ldr (IPBES, 2018a)

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 'Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services Sixth session: Thematic Assessment of Land Degradation and Restoration', retrieved on 2 November 2018 from https://www.ipbes.net/system/tdf/ipbes_6_inf_1_rev.1_2.pdf?file=1&type=node&id=16514 (IPBES, 2018b)

Ivanovich, C., 'A Look Back at 2017: The Year in Weather Disasters and the Connection to Climate Change', retrieved on 13 November 2018 from http://blogs.edf.org/climate411/2018/01/03/a-look-back-at-2017-the-year-in-weather-disasters-and-the-connection-to-climate-change/?_ga=2.202446545.1337490733.1542423783-442978275.1542423783 (Ivanovich, 2018)

Lake, O. O., 'Indigenous Women of Standing Rock Resistance Movement Speak Out on Divestment', *EcoWatch*, retrieved on 29 November 2018 from https://www.ecowatch.com/women-standing-rock-divestment-2359104248.html (Lake, 2017)

Lederach, J., *Little Book of Conflict Transformation: Clear Articulation of the Guiding Principles by a Pioneer in the Field*, Intercourse, Good Books, 2015 (Lederach, 2015)

Livingstone, J. & Ruhindi, E., 'Economic Empowerment for Pastoralist Women: A Comparative Look at Program Experience in Uganda, Somaliland and Sudan', retrieved on 30 November 2018 from http://www.penhanetwork.org/sites/default/files/uploads/manual/documents/Economic%20Empowerment%20for%20Pastoralist%20Women.pdf (Livingstone & Ruhindi, 2011)

Long Soldier, L., 'Women and Standing Rock', *Orion Magazine*, on 27 November 2018 from https://orionmagazine.org/article/women-standing-rock/ (Long, 2017)

Maathai, W., *The Green Belt Movement: Sharing the Approach and the Experience*, New York, Lantern Books (Maathai, 2003)

Maathai, W., *Unbowed: A Memoir*, New York, Knopf (Maathai, 2006)

Maathai, W., *The Challenge for Africa*, New York, Anchor Books (Maathai, 2009)

Mamdani, M., *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism* (New ed.), Princeton, Princeton University Press (Mamdani, 2018)

Manning, S. S., 'And then the Dogs Came: Dakota Access Gets Violent, Destroys Graves, Sacred Site', *Indian Country Today Media Network.com*, retrieved on 6 September 2018 from https://portside.org/2016-09-06/and-then-dogs-came-dakota-access-gets-violent-destroys-graves-sacred-sites (Manning, 2016)

Marten, G. & Suutari, A., 'The Eco-Tipping Points Project: Reversing Tropical Deforestation: Agroforestry and Community Forest Management (Nakhon Sawan Province, Thailand)',

retrieved on 12 November 2018 from http://ecotippingpoints.org/our-stories/indepth/thailand-watershed-forest-agroforestry-community-management.html (Marten & Suutari, 2006)

McCauley, L., " 'Is That Not Genocide?' Pipeline Co. Bulldozing Burial Sites Prompts Emergency Action", *Common Dreams*, retrieved on 5 September 2018 from https://www.commondreams.org/news/2016/09/05/not-genocide-pipeline-co-bulldozing-burial-sites-prompts-emergency-motion (McCauley, 2016)

McCown, B. A., 'What Ever Happened to the Dakota Access Pipeline?', *Forbes*, retrieved on 1 November 2018 from https://www.forbes.com/sites/brighammccown/2018/06/04/what-ever-happened-to-the-dakota-access-pipeline/#2cba55554055 (McCown, 2018)

Mengisteab, K., 'Environmental Degradation in the Greater Horn of Africa: Some Impacts and Future Implications' in *Third World Resurgence*, No. 251/252, 2011, pp.8-12 (Mengisteab, 2011)

Merton, L. & Dater, A. (Producer and Director), *Taking Root: The Vision of Wangari Maathai* [DVD], United States, Marlboro Productions, retrieved from https://m.youtube.com/watch?v=BQU7JoxkGvo (Merton & Dater, 2008)

NAGAAD Network, 'NAGAAD Network', retrieved on 30 November 2018 from http://www.nagaad.org (NAGAAD, 2018)

Navdanya, 'Navdanya', retrieved on 12 November 2018 from http://www.navdanya.org/site/ (Navdanya, 2016)

Ndege, P. O., 'Colonialism and Its Legacy in Kenya', retrieved on 30 November 2018 from http://africanphilanthropy.issuelab.org/resources/19699/19699.pdf (Ndege, 2009)

Olsson, L. & Jarstad, A. K., 'Local Ownership of Peace' in H. Fjelde & K. Hoglund (eds.), *Building Peace, Creating Conflict? Conflictual Dimensions of Local and International Peace-building*, Sweden, Nordic Academic Press, pp.89-104 (Olsson & Jarstad, 2011)

OpenInvest, 'State of the Pipelines: DAPL, Keystone and More in 2018', retrieved on 1 November 2018 from https://www.openinvest.co/blog/where-is-the-dapl-now/ (OpenInvest, 2018)

Opido, G., Odwe, G., Oulu, M. & Omollo, E., *Migration as Adaptation to Environmental and Climate Change: The Case of Kenya*, Kenya, IOM, 2017, (Opido, Odwe, Oulu & Omollo, 2017)

Oregon State University, 'New Analysis Shows Brazil Slows Deforestation with Land Registration Program', *ScienceDaily*, retrieved on 17 November 2018 from www.sciencedaily.com/releases/2017/11/171101151224.htm (Oregon State University, 2017)

Organization for Economic Co-operation and Development (OECD), 'Overview of the Links between the Environment, Conflict and Peace', retrieved on 2 September 2018

https://www.eda.admin.ch/dam/deza/en/documents/themen/fragile-kontexte/92806-overview-environment-conflict-peace_EN.pdf (OECD, 2005)

Parenti, C, *Tropic of Chaos: Climate Change and the New Geography of Violence*, New York, Nation Books, 2011 (Parenti, 2011)

Park, M. & Cuevas, M., 'Dakota Access Pipeleine clashes turn violent', *CNN*, retrieved on 6 September 2018 from https://www.cnn.com/2016/11/21/us/dakota-access-pipeline-protests/index.html (Park & Cuevas, 2016)

Pastoral and Environmental Network in the Horn of Africa (PENHA), 'Tackling Somaliland Pastoralists Poverty and Environmental Degradation—End of Project Report', retrieved on 30 October 2018 from http://www.penhanetwork.org/sites/default/files/uploads/manual/documents/Somaliland%20Baring%20Foundation%20Proj%20Rep%20Nov%2005.pdf (PENHA, 2005)

Pastoral and Environmental Network in the Horn of Africa (PENHA), 'Sustainable Employment and Economic Development', retrieved on 31 October 2018 from http://www.penhanetwork.org/sustainable-employment-economic-development (PENHA, 2018)

Pegg, S. & Kolstø, P., 'Somaliland: Dynamics of Internal Legitimacy and (lack of) External Sovereignty', *Geoforum*, 66, pp.193-202 (Pegg & Kolstø, 2015)

Perkins, E. & Kuiper, E., 'Explorations: Feminist Ecological Economics', *Feminist Economics*, Vol. 11, No. 3, pp.107-150 (Perkins & Kuiper, 2005)

Phillips, S. G., 'When Less was More: External Assistance and the Political Settlement in Somaliland', *International Affairs*, Vol. 92, No. 3, pp.629-645 (Phillips, 2016)

Powers, M. C. F., Schmitz, C. L., Nsonwu, C. Z., & Mathew, M. T., 'Environmental Migration: Social Work at the Nexus of Climate Change and Global Migration', *Advances in Social Work*, Vol. 18, 3, pp.1023-1040 (Powers, Schmitz, Nsonwu & Mathew, 2018)

Raleigh, C. & Urdal, H., 'Climate Change, Environmental Degradation and Armed Conflict', *Political Geography*, Vol. 26, No. 6, pp.674-694, retrieved from https://doi.org/10.1016/j.polgeo.2007.06.005 (Raleigh & Urdal, 2007)

Randol, L., 'Women's Leadership at Standing Rock, Linking up with Other Indigenous Movements', *Commodities, Conflict and Cooperation*, retrieved on 29 November 2018 from https://sites.evergreen.edu/ccc/energy-domestic/standing-rock/page-for-randol/ (Randol, 2017)

Reimer, L. E., 'Applying the Conflict Transformation Lens to Understand Why Indigenous Canadians Drop Out of School' in Reimer, L. E., et al., *Conflict Transformation, Peacebuilding, and Storytelling*, New York, Lexington, pp.37-60 (Reimer, 2018)

Reimer, L. E., Schmitz, C. L., Janke, E. M., Askerov, A., Strahl, B. T. & Matyók, T., *Transformative Change: An Introduction to Peace and Conflict Studies*, Lanham, MD, 2015 (Reimer, Schmitz, Janke, Askerov, Strahl & Matyók, 2015)

Republic of Lakotah, 'The Lakotah's 158 Year Struggle for Legal Justice', retrieved on 29 November 2018 from http://www.republicoflakotah.com/steps-to-sovereignty/158-year-stuggle-for-justice/ (Republic of Lakotah, 2018)

Republic of Somaliland, Ministry of Environment and Rural Development (MoERD), Anglo-Somali Society Somaliland Environmental Stewardship Paper, retrieved on 28 October 2018 from http://anglosomalisociety.org.uk/documents/AaMeeting25Oct2016.talkoriginal.pdf (MoERD, 2016)

Rowsome, A., 'In Somaliland, women are being raped as a result of extreme drought and lack of support', *Independent*, retrieved on 30 November 2018 from https://www.independent.co.uk/news/world/africa/east-africa-drought-horn-somaliland-somalia-refugees-rape-miscarriages-a7586471.html (Rowsome, 2017)

Sacred Stone Camp, 'Sacred Stone Camp History', retrieved on 5 September 2018 from https://www.sacredstonevillage.net/new-page (Sacred Stone Camp, 2016)

Save the Children, 'Children face increased risk of violence and exploitation as famine looms in drought-stricken Somalia', retrieved on 30 November 2018 from https://www.savethechildren.net/article/children-face-increased-violence-and-exploitation-famine-looms-drought-stricken-somalia (Save the Children, 2017)

Save the Children, 'Somaliland's drought threatens progress in protecting females from sexual violence', retrieved on 20 November 2018 from https://www.savethechildren.net/article/somaliland-s-drought-threatens-progress-protecting-females-sexual-violence (Save the Children, 2018)

Scheffran, J., Brzoska, M., Kominek, J., Link, P. M. & Schilling, J., 'Climate Change and Violent Conflict', *Science*, New Series, 336 (6083) pp.869-871 (Scheffran, Brzoska, Kominek, Link & Schilling, 2012)

Shnayerson, M., *Coal River: How a Few Brave Americans Took On and Powerful Company—and the Federal Government—To Save the Land They Love*, New York, Farrar, Straus and Giroux, 2008 (Shnayerson, 2008)

Skillington, T., *Climate Justice and Human Rights*, New York, Palgrave Macmillan, 2017 (Skillington, 2017)

Sloan, L. M., Joyner, M., Stakeman, C. & Schmitz, C., *Critical Multiculturalism and Intersectionality in a Complex World*, New York, Oxford University Press, 2018 (Sloan, Joyner, Stakeman & Schmitz, 2018)

Sorenson, A., 'Dakota Access Pipeline controversy cost companies at least $7.5 billion, study finds', *Colorado University Boulder Today*, retrieved on 29 November 2018 from https://www.colorado.edu/today/2018/11/26/dakota-access-pipeline-controversy-cost-companies-least-75-billion-study-finds?fbclid=IwAR3PTpwkhXxUw0WmlUNExQXVLqNc5FoYL5YJ8LmfB2hQTMGIMHgmtAPRyHo (Sorenson, 2018)

Stern, P. C., Young, O. R., & Druckman, D. (eds.), *Global Environmental Change: Understanding the Human Dimensions*, Washington DC, National Academy Press, 1992 (Stern, Young & Druckman, 1992)

Strides in Development, *Wangari Maathai & the Greenbelt Movement* [Video file], retrieved from https://m.youtube.com/watch?v=BQU7JOxkGvo (Strides in Development, 2010)

Széll, G., 'Environmental Conflicts as a New Dimension of Peace Research', 158th Seminar of the Institute for Peace Science, Hiroshima University, 2005 (Széll, 2005)

The Greenbelt Movement, 'Gender Livelihood and Advocacy', retrieved on 30 November 2018 from http://www.greenbeltmovement.org/what-we-do/community-empowerment (The Greenbelt Movement, 2018)

Transcend Media Services, "Global Warming Report, an 'Ear-Splitting Wake-Up Call' Warns UN Chief", retrieved on 14 November 2018 from https://www.transcend.org/tms/2018/10/global-warming-report-an-ear-splitting-wake-up-call-warns-un-chief/ (Transcend Media Services, 2018)

Union of Concerned Scientists, 'Brazil's Success in Reducing Deforestation', retrieved on 12 November 2018 from https://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/Brazil-s-Success-in-Reducing-Deforestation.pdf (Union of Concerned Scientists, 2011)

Union of Concerned Scientists, 'Rocky Mountain Forests at Risk', retrieved on 13 November 2018 from https://www.ucsusa.org/sites/default/files/attach/2014/09/Rocky-Mountain-Forests-at-Risk-Full-Report.pdf (Union of Concerned Scientists, 2014a)

Union of Concerned Scientists, 'Encroaching Tides: How Sea Level Rise and Tidal Flooding Threaten U.S. East and Gulf Coast Communities over the Next 30 Years', retrieved on 13 November 2018 from https://www.ucsusa.org/sites/default/files/attach/2014/10/encroaching-tides-full-report.pdf (Union of Concerned Scientists, 2014b)

United Nations, 'Climate Change and its Possible Security Implications', retrieved on 12 November 2018 from http://www.un.org/ga/search/view_doc.asp?symbol=A/64/350 (United Nations, 2009)

United States Global Change Research Program (USGCRP), 'Climate Science Special Report: Fourth National Climate Assessment', Vol. I [Wuebbles, D. J., et al., U.S. Global Change Research Program, Washington DC, USA, p.470, DoI: 10.7930/J0J964J6] (USGCRP, 2017)

Walker, T., '3 Things You Need to Know About Indigenous Efforts Against the Dakota Access Pipeline', retrieved on 30 October 2018 from https://everydayfeminism.com/2016/09/dakota-access-pipeline/ (Walker, 2016)

Weiss, M. N. & Kitchell, M., *A Fierce Green Fire: The Battle for a Living Planet*, [DVD], First Run Features (Weiss & Kitchell, 2012)

Yoder, C., *Little Book of Trauma Healing: When Violence Strikes and Community Security is Threatened*, Kindle Edition, Intercourse, Good Books (Yoder, 2015)